



WINDOWS

by

VENTO

VENTO WELDED STEEL WINDOWS BY VENTO STEEL PRODUCTS COMPANY

MUSKEGON MICHIGAN

THE COMPANY

For sixteen years THE VENTO STEEL PRODUCTS COMPANY have been manufacturing Electric Arc Welded steel windows, having pioneered numerous developments within the industry. Modern plant and equipment, a thoroughly experienced Engineering Department; and a production staff of window craftsmen, are devoted to the manufacture of steel window products of genuine merit.

THE PRODUCT

Domestic steel—Full weight and depth of sections—arc welded where required for additional strength.

Vento window products include types for all purposes of industrial, residential or public construction and embrace the

entire range of casement and industrial window groups. Individual catalogs are available on each.

THE ORGANIZATION

In addition to an experienced corps of thoroughly trained field representatives, distribution facilities are maintained in principal cities; and the Company's erection organization will undertake complete installation contracts when required. A competent Engineering staff is at the service of Vento clients.

"WINDOWS BY VENTO"

is definite assurance of the very highest quality of steel window construction.

SPECIFICATIONS—VENTO CASEMENTS

The following specification notes will be useful to specification writers, covering all types of Vento Steel Casements

- 1. GENERAL:** All steel casements shown on drawings shall be of the (Insert whether DeLuxe, Simplex or Economy residence type) or (casements, projected casements or combination casements of the intermediate section type) as manufactured by the VENTO STEEL PRODUCTS COMPANY of Muskegon, Michigan, or equal.
- 2. MATERIAL:** Frame and ventilator sections shall be hot-rolled new Billet steel providing two point weathering contact between ventilator and frame. Corners of frame and ventilator sections to be mitred and welded, all welds being ground to a smooth finish. All steel hardware parts shall be heavily cadmium plated before painting.
- 3. HARDWARE:** Provide (standard medium statuary finish or full polished bronze) hardware according to manufacturers' standards for the type of window above specified. (Include here whether quadrant or rotary type underscreen operator desired.) All side hung swing leaves shall open on heavy, extended cleaning hinges solidly welded or riveted to casement frame.

NOTE: Add following specifications if sill or transom units are used. Hardware for tilt-in sill units to match hardware of other casements. Transom units shall be equipped with push type locking bar.

- 4. SCREENS FOR CASEMENTS WITH UNDER-SCREEN OPERATORS:** Provide $\frac{5}{8}$ " flat tubular frame screens for all ventilator openings. Frame to be made of electro galvanized steel solidly welded and finished with baked-on enamel. Screen cloth shall be 16-mesh antique bronze wire.

HINGED SCREENS FOR CASEMENTS WITHOUT UNDERSCREEN OPERATORS: Supply stand-

ard Vento Side Hinged Screens with $\frac{3}{8}$ " tubular steel frame, frame to be made of electro galvanized steel with baked enamel finish. Screen cloth to be of 16-mesh antique bronze wire.

NOTE: SCREENS: Aluminum, bronze or stainless steel screen frames can be supplied on order. Screen cloth can be bronze, aluminum or Inconel metal, the latter being generally used with stainless steel screens under atmospheric conditions of considerable corrosion.

- 5. SHADING:** All casements shall be drilled to receive shade brackets. Shade brackets furnished under another heading.
- 6. MASTIC:** Provide sufficient mastic cement for embedding casements. (Pointing and caulking, if desired, by others.)
- 7. ANCHORS:** Specifications should state which of the several alternative methods of anchorage are required: Viz.: Wood screws, continuous fin anchors (for solid masonry) or Redwood Surrounds. Anchorage materials will be supplied in accordance with this specification.
- 8. GLAZING:** Provide necessary spring wire glazing clips. (Glass, putty and glazing under separate heading.)
- 9. ERECTION:** Casements shall be set in accordance with the manufacturer's instructions (or by manufacturer's erection forces if desired).
- 10. PAINT:** Casements shall receive coat of manufacturer's standard paint applied at the factory before shipment.

VENTO RESIDENCE CASEMENTS

STANDARD TYPES AND SIZES

1212	2214	4214 VC	4224	6214 VC	6224 VC	6224	8224 VC	2222
1312	2314	4314 VC	4324	6314 VC	6324 VC	6324	8324 VC	
1313	2316	4316 VC	4326	6316 VC	6326 VC	6326	8326 VC	2323
1413	2416	4416 VC	4426	6416 VC	6426 VC	6426	8426 VC	
1414	2418	4418 VC	4428	6418 VC	6428 VC	6428	8428 VC	2424
1514	2518	4518 VC	4528	6518 VC	6528 VC	6528	8528 VC	
1614	2618	4618 VC	4628	6618 VC	6628 VC	6628	8628 VC	

Non-vented or fixed units can be furnished in same sizes as shown here.

Handing of casements is determined by location of hinges. Viewed from outside, right-hand casements being hinged at right; left-hand being hinged at left.

TRANSOM TYPE COMBINATIONS

Main vents side hinged. Transoms swing out.

2416T2	4416 VC T2	4426 T4
2518T2	4518 VC T2	4528 T4
2618 T4	4618 VC T4	4628 T8

TRANSOM TYPE WINDOWS

21	41	61	81
2214 TH	4224 TH	6214 TH-VC	
4214 TH-VC			

NOTE

Sizes given are exact sash sizes. $\frac{1}{8}"$ must be allowed on all sides for sash clearance. If more than one type is used in the same opening add $\frac{1}{4}"$ to the sum of the sash sizes for each mullion or transom used to determine the overall opening.

NOTE

Sizes given are exact sash sizes, 1/8\" must be allowed on all sides for sash clearance. If more than one type is used in the same opening add 1/4\" to the sum of the sash sizes for each mullion or transom used to determine the overall sash size.

CURVED HEAD TRANSOMS

CH-1	CH-2	CH-4	CH-6

ARCHITECTURAL PROJECTED WINDOWS

FOR SCHOOLS, OFFICES AND COMMERCIAL BUILDINGS, INSTITUTIONAL
STRUCTURES AND ALL MAJOR CONSTRUCTION

This is a high-grade, heavy section, projected window, the ventilator movement being through the medium of heavy bronze adjustable friction shoes riding in guides concealed in the weathering.

Supplied for either inside or outside putty glazing or inside angle glazing. See section details page 5.

Hardware is fully Polished Solid Bronze. Adjacent ventilators are provided with combination latch and strike.

Either equal or unequal leg frame sections are available. The equal leg construction is recommended for schools and other installations where simplicity of interior trim details is desired. Only a single rebate in the masonry is necessary and the interior trim can be carried direct to the window frame itself. The use of this equal leg section makes an exceedingly strong and rigid window construction.

Unusual attention is given to the assembly of these windows to insure perfect operation. Welded in jig frames; proper alignment, tight weathering, and thorough rigidity become inbuilt features of this Vento line.

Mullions, where required, are supplied with heavy plate covers. Windows are given one coat of priming paint before shipping.

SPECIFICATIONS

Architectural projected windows where shown on the drawings shall be those as manufactured by the VENTO STEEL PRODUCTS COMPANY, Muskegon, Michigan, or equal, and shall be of the sizes and types as shown.

MATERIALS: Frame members shall be heavy specially designed—(equal or unequal)—leg section, allowing $\frac{3}{8}$ " continuous anchorage. The muntins to be special formed T sections. Vertical mullions where indicated are to be manufacturer's standard hot rolled T sections with formed Steel Mullion Covers.

CONSTRUCTION:

NOTE: Specify here whether windows are to be designed for inside or outside putty glazing or inside angle glazing.

Frames and ventilators shall be assembled by tenoned, riveted and welded joints. Continuous two point contact weathering shall be provided between ventilators and frames.

Ventilators to be accurately supported on solid steel arms and bronze adjustable friction shoes, the latter riding vertically in concealed guides.

Window manufacturer shall furnish necessary clips, anchors and bolts for window installation.

NOTE: Steel specification should refer to such punching as is necessary for the attachment of structural clips.

HARDWARE: All hardware shall be solid bronze full polished. Open-out ventilators within reach of manual operation to be equipped with Vento standard bronze ring type cam handle. Open-out vents beyond reach of manual operation shall additionally be equipped with pull down pole head ring.

Open-in ventilators shall be equipped with handle and keeper, all hardware to match in design and finish. Where such vents are beyond reach of manual operation, hardware to be bronze spring catch for pole operation.

ERECTION: All windows to be set plumb and true in prepared openings; and to be properly aligned and securely anchored prior to glazing.

NOTE: Mention in masonry specification that all openings are to be accurately constructed in accordance with manufacturer's details and also mention that all mortar, grouting and pointing shall be done by the masonry contractor after the windows are set.

NOTE: Mention under structural steel specification, where required, that all structural work forming a part of the window framing is to be provided by the steel contractor and punching in same to be in accordance with window manufacturer's details.

PAINTING: All windows to receive one shop coat of window manufacturer's standard shop paint.

NOTE: Windows should be given a field coat of paint after erection but before glazing, the final field coat not to be applied until putty has thoroughly set.

GLASS AND GLAZING:

NOTE: Glass and glazing are not a part of the window contract. The following, however, may be noted.

Specify glass thickness. Single strength glass is not recommended. Specify a high grade steel window putty. Do not permit wood sash putty to be used.

For putty glazing specify that glass shall be bedded and the putty applied in a neat and clean cut manner.

For angle glazed windows specify that the glass shall be set in bed putty and held by glazing angles.

SCREENS:

NOTE: Vento standard flat screens can be applied to the outside of architectural projected windows with project-in ventilators. No change in hardware is necessary.

Screening project-out vents with inside flat screens requires under-screen hardware, which when specified is supplied in bronze.

STANDARD TYPES AND SIZES

Windows of the type illustrated can be supplied in widths varying by 6" from the minimum to maximum limits indicated.

COLUMN-1		COLUMN-2		COLUMN-3	
TYPE	A	TYPE	MA	TYPE	I
TYPE	B	TYPE	MB	TYPE	J
TYPE	C	TYPE	MC	TYPE	K
TYPE	D	TYPE	MD	TYPE	L
TYPE	E	TYPE	ME	TYPE	M
TYPE	F	TYPE	MF	TYPE	N
TYPE	G	TYPE	MG	TYPE	O
TYPE	H	TYPE	MH	TYPE	P

WINDOWS OF EACH TYPE ILLUSTRATED CAN BE SUPPLIED IN HEIGHTS VARYING BY 6" FROM THE MINIMUM AND MAXIMUM LIMITS INDICATED FOR EACH TYPE

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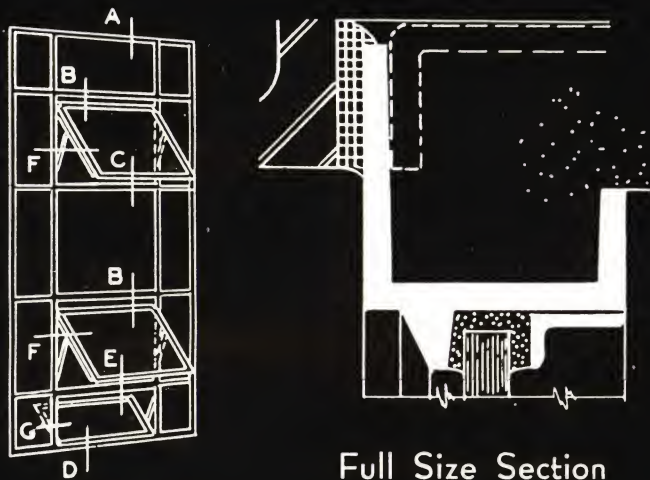
ARCHITECTURAL PROJECTED WINDOWS

ASSEMBLY AND INSTALLATION DETAILS

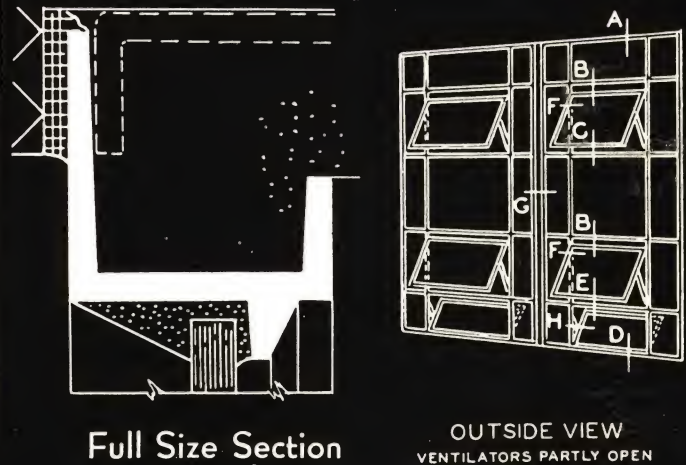
Full size sections at top show both inside angle glazing and outside putty glazing.
Installation and section assemblies below apply to either.

DETAILS INDICATE RECOMMENDED CAULKING POINTS
WHERE SUCH IS REQUIRED OR SPECIFIED

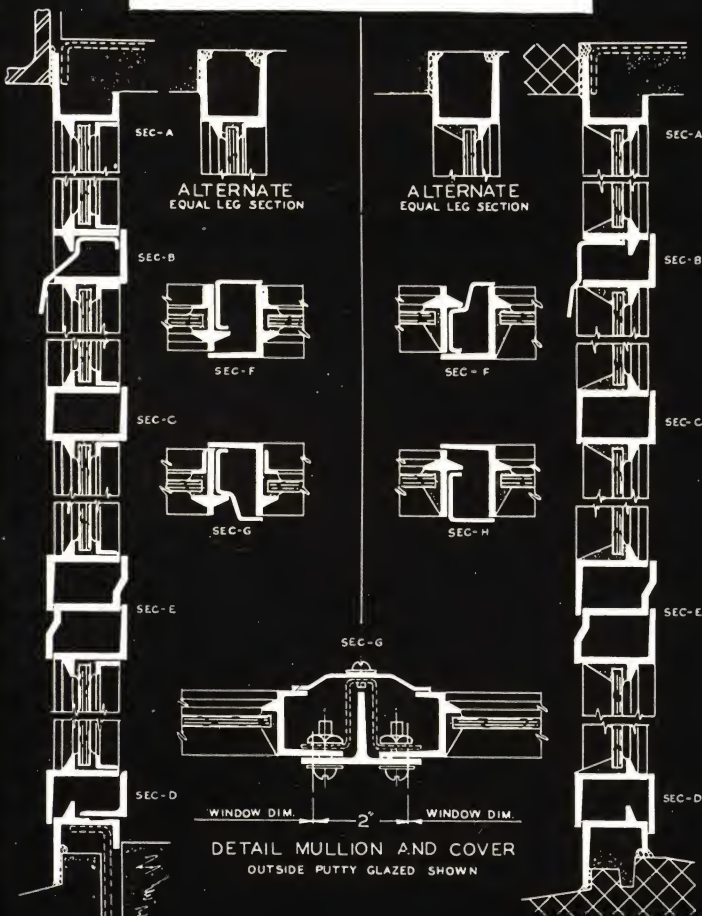
Glazed Inside



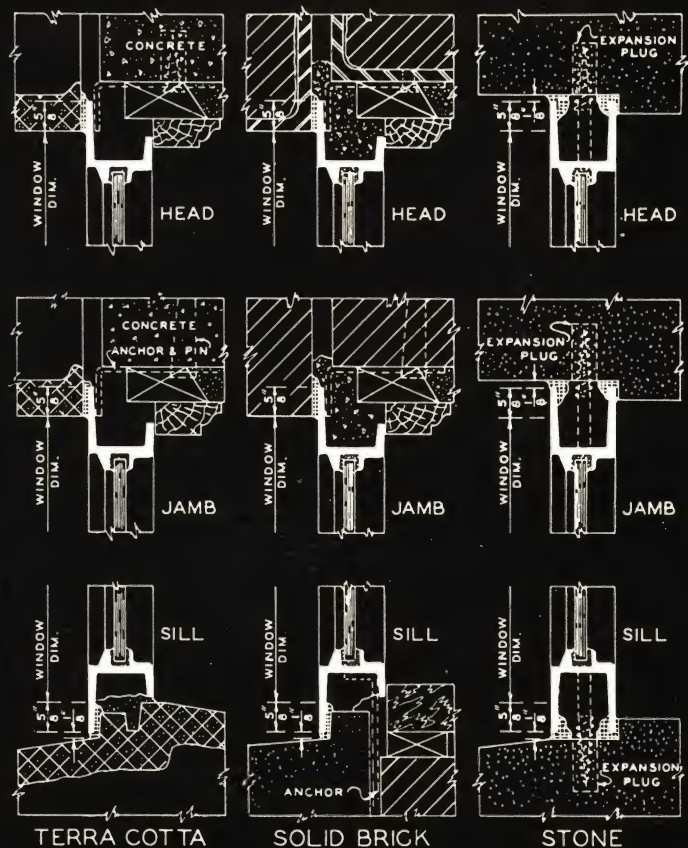
Putty Glazed Outside



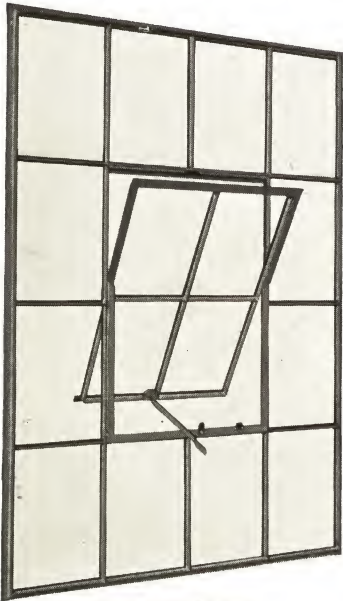
ASSEMBLY DETAILS



INSTALLATION DETAILS



INDUSTRIAL AND COMMERCIAL STEEL WINDOWS



PIVOTED

These windows are made of full 1 3/8-inch section under air hammer assembly and arc welding. Rigid, strong and durable.

Pivoted ventilators have concealed hinges.

Projected vents have adjustable friction through the medium of sliding bronze shoes.

Standard hardware is solid bronze semi-finished, and rust proofed steel fittings.

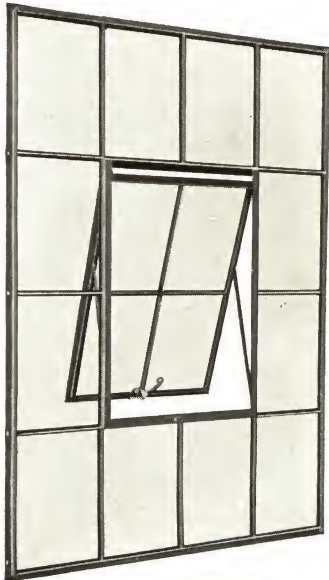
Standard window finish is a high-grade brown oxide paint. Other finishes available on special order.

Flat screens supplied for both pivoted and projected windows. Pivoted windows to be screened require special preparation and special hardware. Projected windows with inward opening vents when screened show greater economy.

Vento Windows are welded insuring perfect alignment. Vento welded construction retains this alignment permanently.

The initial assembly of frame members is by tenon construction. These tenons are securely air hammered. Following the jig assembly, MAIN JOINTS are welded.

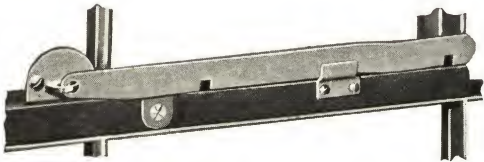
The Vento welding process, developed in our own shops, accomplishes a clean, smooth joint that does not interfere with glass or glazing, yet actually fuses the metal together.



PROJECTED



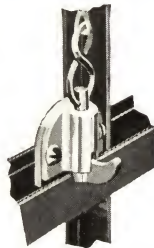
Optional Gravity Type Self-acting Cam Handle Hardware No. 604



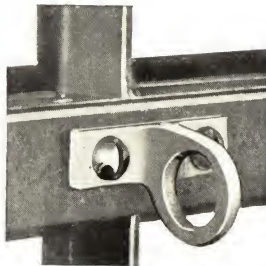
Lock Bar No. 505 in Closed Position



Underscreen Bar-lock No. 800



Optional Sill Catch and Chain Hardware No. 719. Head Idler Roller No. 703 is part of this hardware



Pull-down Head Ring No. 652



Front View of Hinge. Note the Neat Tight and Weatherproof Assembly

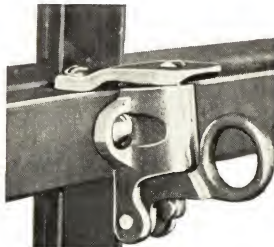
Hinges are entirely concealed and of the strongest possible construction being made of 1 5/8" plate steel. Hinge pins are of heavy solid bronze.



Open Position of Ventilator Showing Concealed Hinge Construction



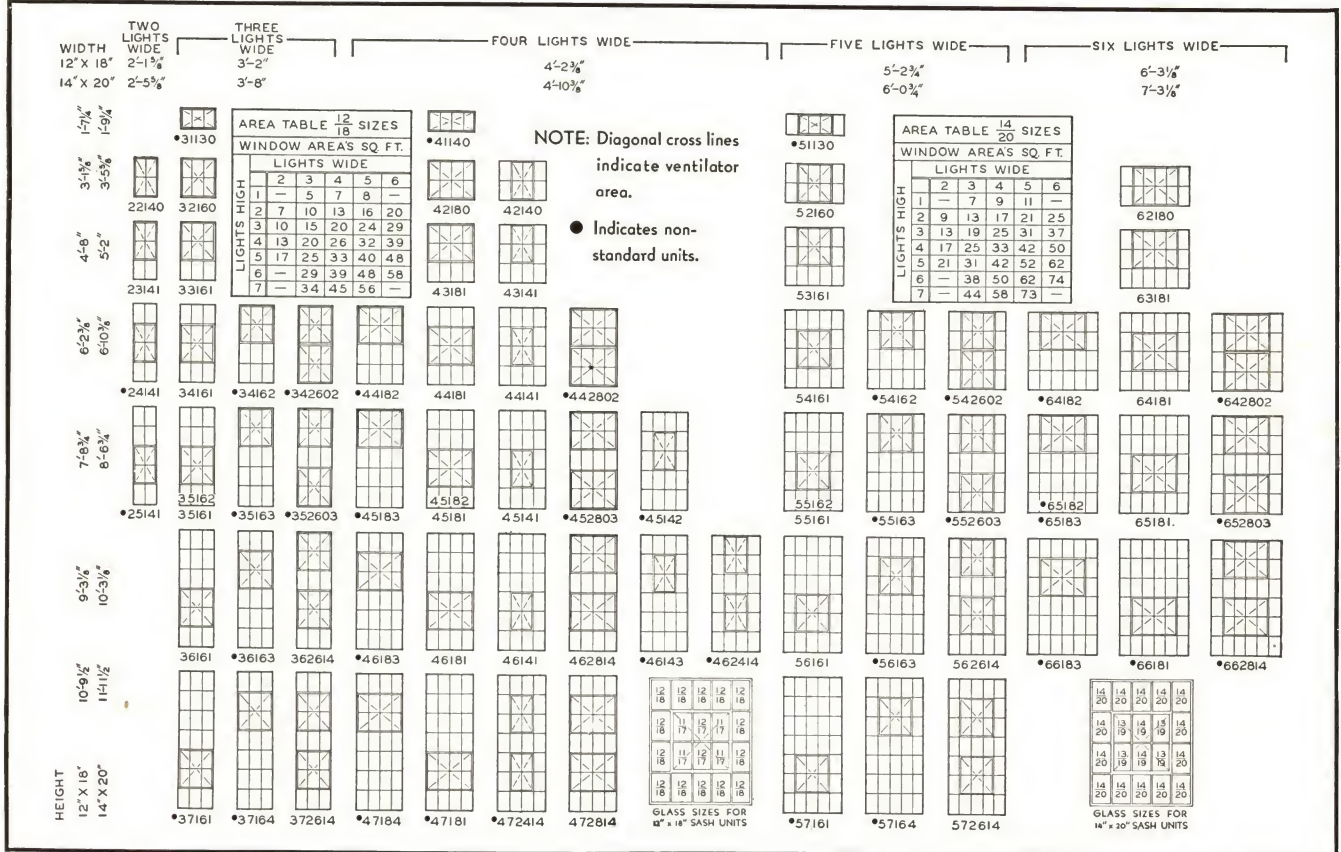
Inside View of Hinge. Surface is Entirely flush and Tight



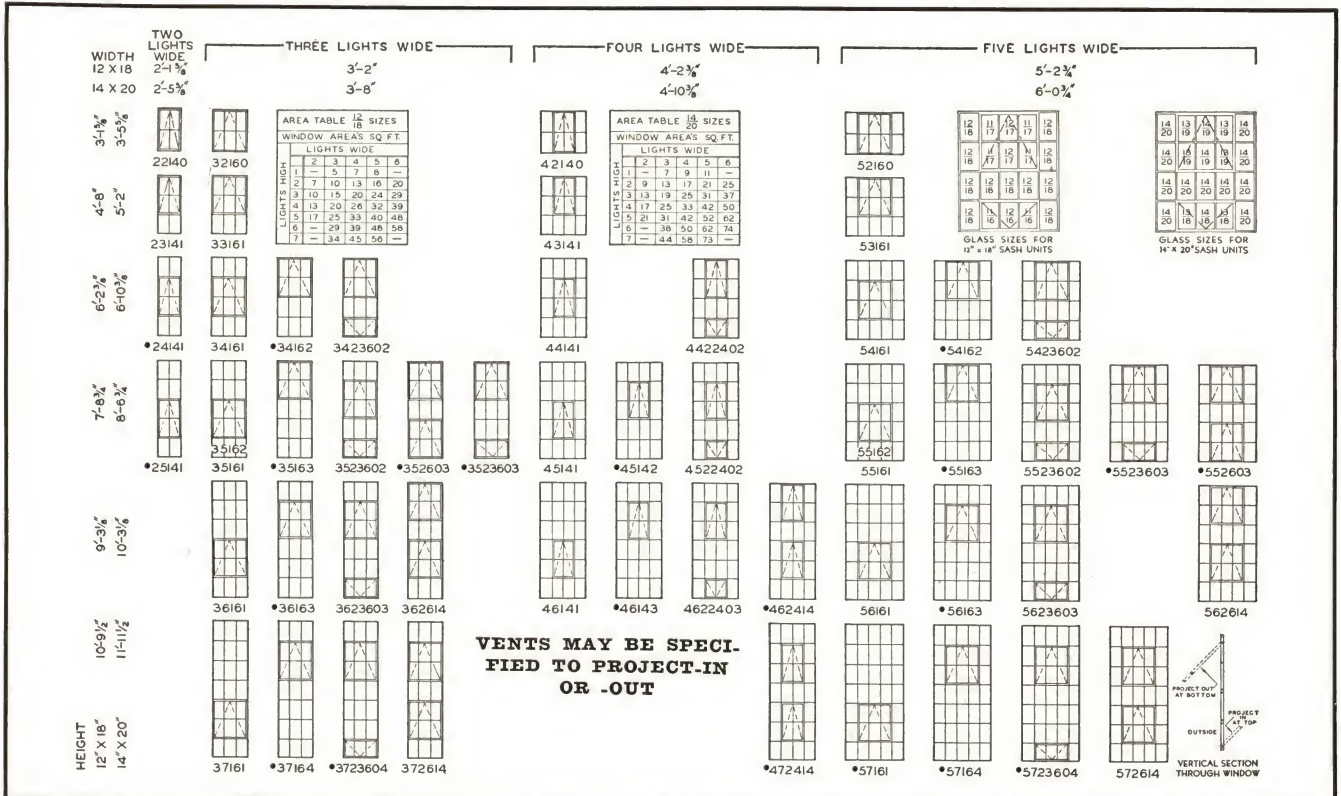
Head Catch No. 717 for Project-in Top Vents

INDUSTRIAL AND COMMERCIAL STEEL WINDOWS

PIVOTED VENTILATORS . . . STANDARD TYPES AND SIZES



PROJECTED VENTILATORS . . . STANDARD TYPES AND SIZES



Combinations of Standard Sizes Widths of Openings

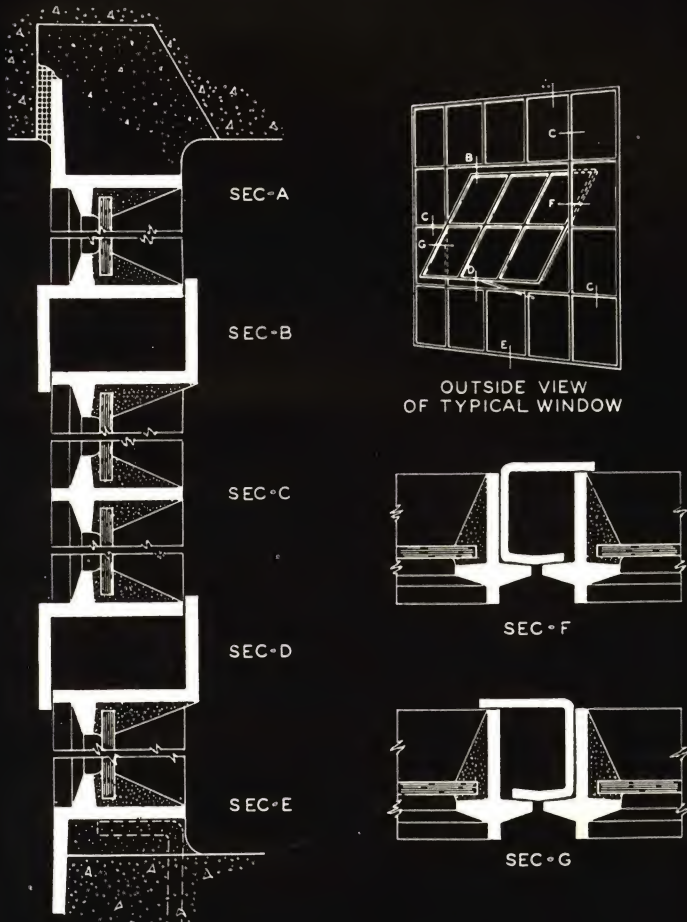
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INDUSTRIAL AND COMMERCIAL STEEL WINDOWS

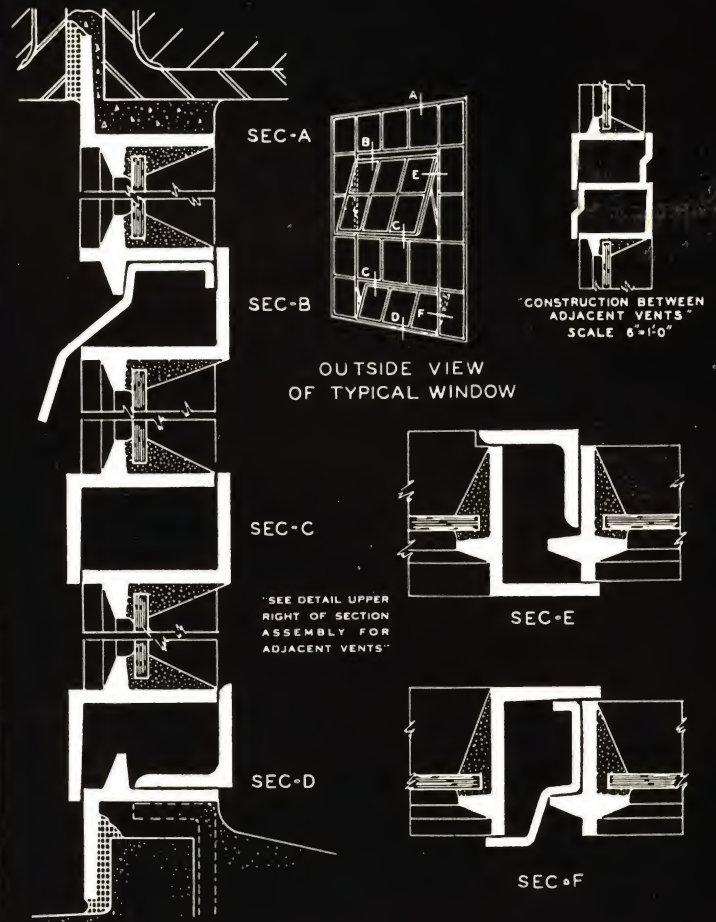
SECTION ASSEMBLY DETAILS

NOTE: Major sections are identical

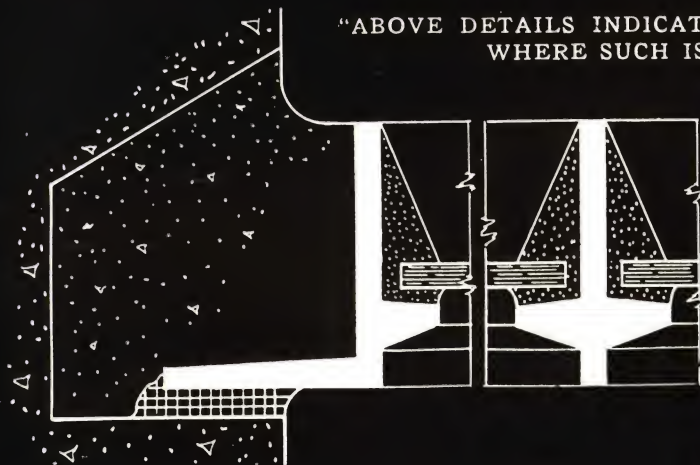
Pivoted Windows



Projected Windows



"ABOVE DETAILS INDICATE RECOMMENDED CAULKING POINTS WHERE SUCH IS REQUIRED OR SPECIFIED"



Full Size Sections - - Inside Putty Glazed



Full Size Sections- Inside Putty Glazed

PREMIER STEEL BASEMENT WINDOWS

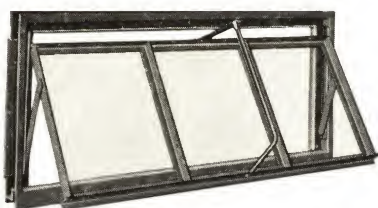


First Open Position Giving Overhead Ventilation With Air Currents Deflected Up and Over Without Direct Draft

- HEAVY DUTY CHANNEL FRAME
- ELECTRICALLY WELDED THROUGHOUT
- VERSILATOR OPERATION (Patented)
- PUTTYLESS GLAZING
- DOUBLE CONTACT WEATHERING
- WATERTIGHT : : : WEATHERPROOF
- PATENTED LOCKING BAR OPERATES WINDOW FROM BOTTOM

Versilator Operation.

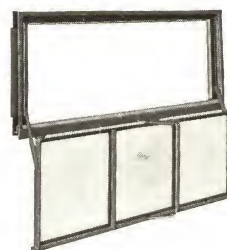
An exclusive design feature of Vento PREMIER windows. This simple and reliable device gives either overhead or direct ventilation in any selected degree, with positive automatic locking at each stage. Sash is instantly removable from frame in any position.



Intermediate Top Hung Position. Both Top and Bottom Ventilation With Downward Deflection

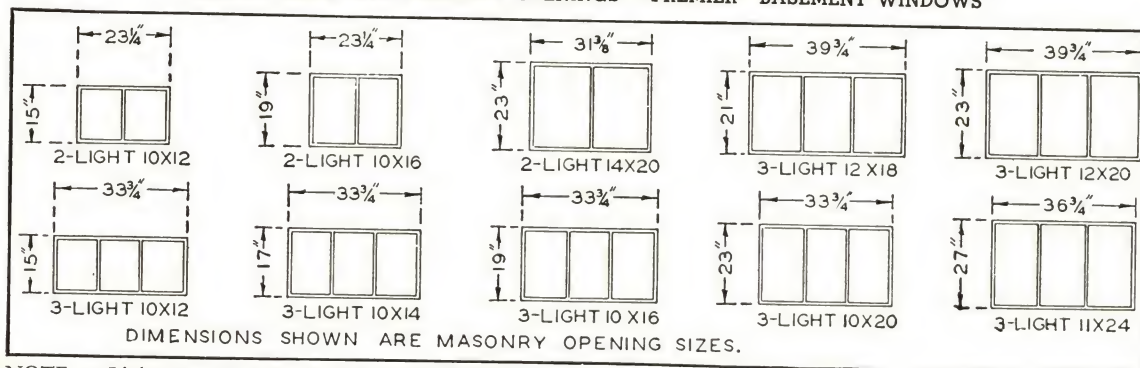


Merely Raising the Sash From the Intermediate Position Locks the Window in Fully Open Position. No Ceiling Hook Required



Sash Lifts Off Sill and Hangs Down Inside the Wall Giving Full Opening for Use as a Coal Window or Other Purposes

WINDOW SIZES AND MASONRY OPENINGS—"PREMIER" BASEMENT WINDOWS



NOTE—2-Light 10 x 16, 3-Light 10 x 14 and 3-Light 11 x 24 are non-stock sizes.

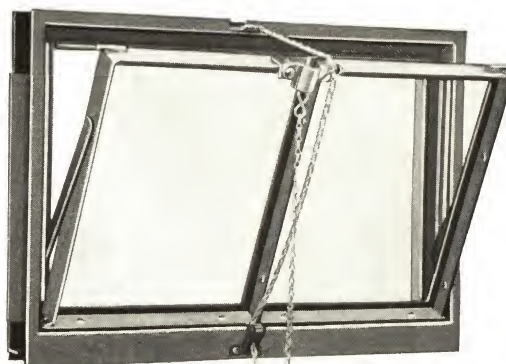


BARRED WINDOWS

For efficient protection 1/2-in. bars are welded into frame. Recommended for cellars and rear or alley elevations of commercial buildings

SCREENS, SCREEN GUARDS AND STORM SASH STOCKED FOR ALL WINDOW SIZES

Basement windows can be mullioned together for installation under show windows, above shelving or over laundry tubs.



CHAIN OPERATORS

For high installations. Recommended for locations too high for manual operation

Simple and effective. Windows will be specially prepared at the factory for this operation

OTHER VENTO PRODUCTS

INTERMEDIATE SECTION CASEMENTS

VENTO INTERMEDIATE WINDOWS in weight of section, care in manufacture, hardware details and finish make this line worthy of the finest structure. Bronze hardware is standard for all intermediate section types and a wide range of standard sizes are available.

This window is recommended for the finer homes. Furnished in both screened and non-screened type.

PROJECTED AND COMBINATION CASEMENTS

are especially suited for the better class of school, institutional, commercial, and public construction.

CUSTOM-BUILT CASEMENTS of heavy section are also available. Full data on request.

TOP HUNG CONTINUOUS WINDOWS FOR HEAVY INDUSTRIAL CONSTRUCTION

Continuous windows are made in units up to 20 ft. in length in multiples of 2 ft. Heights are standard at 3 ft. 0 in., 4 ft. 0 in., 5 ft. 0 in., and 6 ft. 0 in.

This type of window lends itself to many forms of truss and structural design. Our engineering department will gladly submit special layouts to clients' requirements.

Separate catalogs furnished on request.

MECHANICAL OPERATORS

Mechanical Operators for group control of Commercial and Industrial windows are largely designed and supplied to job requirements.

Our Engineering Department will be glad to assist you with your problems. Catalogs available upon request.

INDUSTRIAL DOORS

VENTO INDUSTRIAL DOORS are suitable for industrial buildings, service departments of commercial buildings and

institutions. Swing and slide types are available in a wide range of sizes to meet most conditions. Stiles and rails are made of 14-gauge pressed steel tubing, all corners neatly fitted and solidly welded. Standard pressed steel door frames are available for swing doors. The corners are heavily reinforced and prepared for hardware. Doors can be fitted with cylinder lock or lever latch hardware as required. Upper door panel may be open for glass or solid steel panels as desired.

SECURITY AND PROTECTION WINDOWS

Vento manufactures a complete range of Security and Protection windows. These windows are specially designed, standard and stock types. The heavy welded construction provides adequate protection under ordinary circumstances for commercial and semi-detention purposes.

Separate catalog furnished upon request.

AREAWAY AND UTILITY WINDOWS

The Vento Areaway Window is specially designed for basement areaway openings. Made of the same construction as our commercial projected windows but in one special size—an economical window.

The Vento Utility Window similar in construction to the Areaway Window. Ideal for use for private garages, laundries, service stations and other small commercial structures. Made in two standard sizes, both of which fit concrete block construction.

BARN WINDOWS

The Vento Barn Window was specially designed for use in barns and other farm buildings. Made in two standard sizes to fit concrete block construction. Furnished with special side shields which deflect the air currents upward and away from stock. Ventilator equipped with patented locking bar giving controlled ventilation.

Catalog on request.

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COAL CHUTES

Vento Coal Chutes are made of heavy, all-steel construction, completely welded. Made and stocked in five standard sizes for installation in walls of homes and commercial buildings. Equipped with strong spring lock and chain. Available with all-steel or glass paneled doors. Special grade line chutes made in two standard sizes for commercial buildings.

